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Research Article
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First Records of *Cortinarius leucoluteolus* and *C. roseocastaneus* from Turkey

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Abstract: *Cortinarius leucoluteolus* and *C. roseocastaneus* are reported for the first time from Turkey and provided here with definitions, photos, and a short discussion. *Cortinarius leucoluteolus* has a yellowish white or ochre pileus; ochre or pale flesh colour wavy lamellae; generally curved, whitish or creamy and hard stipe; ovoid, elliptical or amygdaliform basidiospores and clavate basidia. *Cortinarius roseocastaneus* has a broad umbonate, dark brown, chestnut honey colored or slightly reddish brown pileus; sparse, pale brown, dark yellowish to brown lamellae; a cylindrical, slightly enlarged, mostly curved, whitish fibrillose or pale brown stipe; ovoid or ellipsoid basidiospores and clavate basidia.

Key words: Basidiomycota, *Cortinarius*, new record, taxonomy

Cortinarius leucoluteolus ve *C. roseocastaneus*'un Türkiye'den İlk Kayıtları

Öz: *Cortinarius leucoluteolus* ve *C. roseocastaneus* Türkiye'den ilk kez rapor edilmiş ve burada tanımlar, resimler ve kısa bir tartışma ile birlikte verilmiştir. *Cortinarius leucoluteolus* sarımsı beyaz veya koyu sarı bir şapkaya; koyu sarı veya soluk et rengi dalgalı lamellere; genellikle eğri, beyaz veya krem rengi ve sert bir sapa; yuvarlak, eliptik veya badem biçiminde bazidiyosporlara ve çomak şeklinde bazidiyumlara sahiptir. *Cortinarius roseocastaneus* tepe çıkıntılı, koyu kahverengi veya kestane balı renginde veya hafif kırmızımsı kahverengi bir şapkaya; seyrek, soluk kahverengi, koyu sarıdan kahveye doğru değişen renkte lamellere; silindirik, hafifçe genişlemiş, çoğunlukla eğri, beyazımsı lifli veya soluk kahverengi bir sapa; yuvarlağımsı veya eliptik bazidiyosporlara ve çomak şeklinde bazidiyumlara sahiptir.

Anahtar kelimeler: Basidiomycota, *Cortinarius*, taksonomi, yeni kayıt

Introduction

Cortinarius leucoluteolus Rob. Henry first-time was described from France by Henry (1983). It is easily recognised with dry, yellowish buff or opaque yellowish pileus. *Cortinarius roseocastaneus* Niskanen, Liimat. & Kytöv. was initially described by Liimatainen et al. (2014) from Finland, Varsinais-Suomi, Turku, Ruissalo, Honkapirtti in deciduous forest. It is characterized by dark brown to blackish brown, hygrophanous pileus, brown to dark brown lamellae, obovoid to weakly lacrymoid basidiospores.

The largest type study of *Cortinarius* was made by Liimatainen et al. (2014). Before the present study some studies have been carried out in Turkey including *Cortinarius* species from different part of Turkey (Türkecul, 2003; Sesli, 2006; Kaya et al., 2009; Kaşık et

al., 2011; Uzun et al., 2013; Akata et al., 2015; Sesli, 2018; Sesli and Liimatainen, 2018; Sesli, 2020).

The aim of the present study is to contribute to Turkish Mycota by introducing two *Cortinarius* species collected from Trabzon.

Material and method

Basidiomata were collected and photographed from Sevinç neighborhood, Maçka, Trabzon, Turkey. Investigation of basidiospores, basidia, pileipellis and other microscopic structures important for diagnosis were performed according to Cléménçon (2009) in the Mycology Laboratory of Trabzon University. In order to view and examine the basidiospores, a piece of basidioma is placed in water. After waiting for a while, basidiospores were obtained by tightening with the



forceps. To view the structures of the other microscopic elements, superficial and transverse sections were taken by hand with a new razor blade under a Zeiss Stemi 2000-C microscope, and mounted in 3% NH₃ solution, stained with aqueous 4% Congo red and examined under a Zeiss Axio Imager A2 trinocular microscope. The remaining material was dried on an electrical heater, packed and placed into fungarium cupboard after some days of processing in the deep freezer.

Bulgular / Results

Cortinariaceae R. Heim ex Pouzar

Cortinarius leucoluteolus Rob. Henry, Bull.

Trimest. Soc. Mycol. Fr. 99(1): 75 (1983) (Figure 1)

Pileus 40–60(–70) mm convex to plane, irregular, pale yellowish, yellowish white or ochre; margin generally broken, sometimes lobed. Umbo absent. Lamellae emarginate, smooth, ochre, pale flesh colour, darker when injured, wavy, L= 50–60 × l= 1–2. Content whitish, smell indistinct. Stipe cylindrical, generally curved, 80–100(–120) × 8–10(–12) mm, whitish to creamy, nudus, sometimes covered with reddish brown remnant of cortina, hard, tapering towards base. Basidiospores [n= 40] subovoid to ellipsoid or amygdaliformis, smooth, slightly granulated, (5.6–)6.5–7.4(–7.6) × (3.2–)3.5–4.5(–4.8) μm; on average 6.8 × 4.1 μm. Basidia clavate, 38–42 × 7–9 μm; on average 38.8 × 7.9 μm and 4-spored. Pileipellis consists of cylindrical hyphae. Clamp connections present at all tissues. Marginal cells 22–30 × 2.9–3.4 μm.

Specimen examined: TURKEY, Trabzon, Maçka, Sevinç neighborhood, Göller area, gregarious with hornbeam and spruce (*Carpinus betulus* L. and *Picea orientalis* L.), 40°51'34.14" N and 39°37'40.26" E, 1000 m alt., 18 Sept. 2019, E. Sesli, KATO Fungi 4101.

Cortinarius roseocastaneus Niskanen, Liimat. & Kytöv., in Liimatainen, Index Fungorum 196bis: 1 (2014) (Figure 2).

Pileus 20–30 mm, convex to plane, irregular, with a broad umbo, dark brown, chestnut honey colored or slightly reddish brown, lighter and striped towards the

edge, darker at the centre, hygrophanous. Margin often slit. Content very thin, dark brown in pileus, pale brown in stipe. Lamellae subdecurrent to decurrent, sparse, pale brown, dark yellowish to brown, L= 25–35, l= 1–3. Stipe cylindrical, slightly enlarged towards base and sometimes tapering, mostly curved, whitish silky-fibrillose, pale brown, darkening at the base, 40–60 × 3–5 mm. Universal veil whitish, pinkish or vinaceous reddish. Odor indistinct. Basidiospores [n= 62] sub-obovoid, ellipsoid to weakly lacrymoid, (6.7–)7–9(–9.5) × (3.9–)4–5(–5.5) μm; on average 7.8 × 4.5 μm, Q= 1.56–1.75, Qm= 1.65, with a low suprahilar depression, moderately verrucose. Basidia clavate, (20–)21–27(–31) × 7–9(–9.3) μm; on average 24.9 × 8.1 μm. Pileipellis made up of cylindrical, regular, parallel hyphae. Clamp connections present at all tissues. Specimen examined: TURKEY, Trabzon, Maçka, Sevinç neighborhood, Kiran area, gregarious and caespitose, with *Quercus petraea* (Mattuschka) Liebl., 40°50'50.25" N and 39°37'41.44" E, 741 m alt., 03 Nov. 2016, E. Sesli, KATO Fungi 3838.

Discussions

In this study, two *Cortinarius* species (*C. leucoluteolus* and *C. roseocastaneus*) are recorded for the first time from Turkey and provided here with descriptions, field and microscopic photos. Our results about the new records generally matched very well with the original descriptions. The findings connected with KATO F. 4101 are in accordance with the original description by Henry (1983) (*C. leucoluteolus*). *Cortinarius roseocastaneus* described by Liimatainen (2014) has 15–30 mm, very dark brown to blackish brown, hygrophanous pileus, brown or dark brown lamellae, 30–60 × 2–4 mm, cylindrical stipe, 7.0–8.4 × 4.5–5.2 μm, obovoid to weakly lacrymoid basidiospores. Our findings are nearly same with those results (pileus dark brown, or slightly reddish brown, 20–30 mm, hygrophanous. Lamellae pale brown, dark yellowish to brown. Stipe cylindrical, 40–60 × 3–5 mm. Basidiospores sub-obovoid, ellipsoid to weakly lacrymoid, 7–9 × 4–5 μm). We think that some small morphologic differences are due to the different ecological conditions.

Acknowledgements

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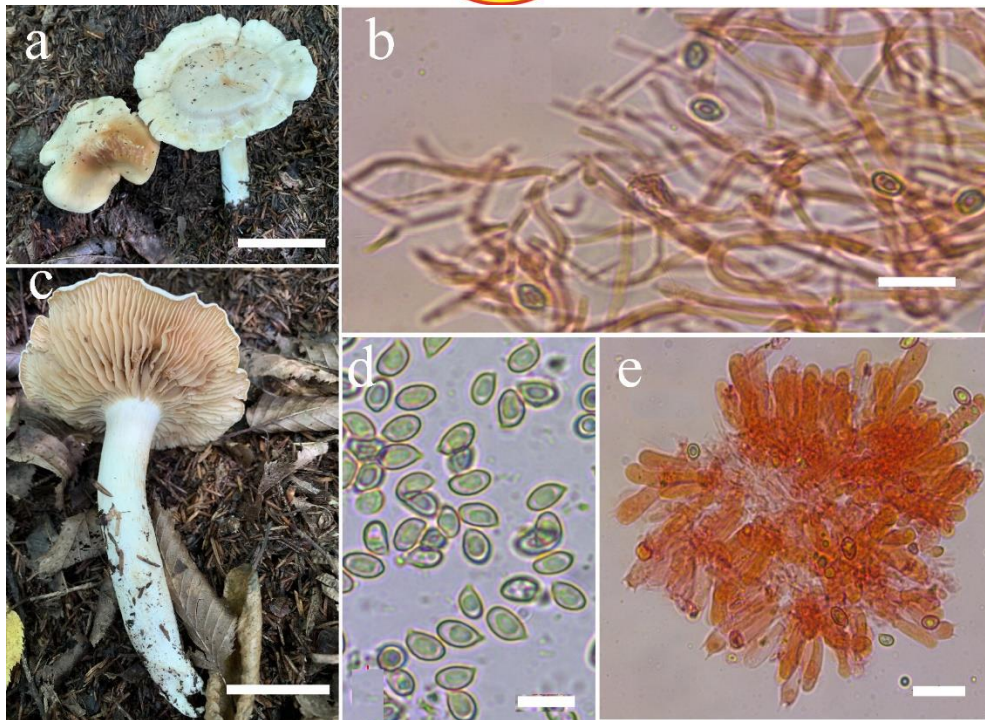


Figure 1. *Cortinarius leucoluteolus*: a and c- basidiomata, b- pileipellis, d- basidiospores, e-basidia (bars: a and c= 35 mm, b= 20 μ m, d= 10 μ m, e= 20 μ m).

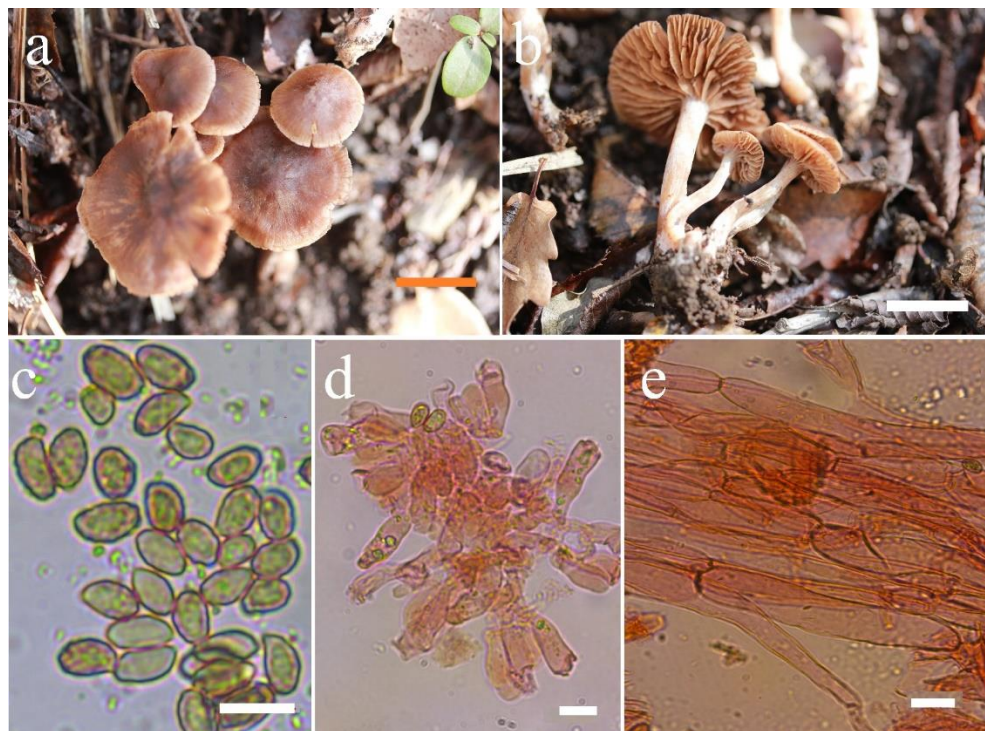


Figure 2. *Cortinarius roseocastaneus*: a and b- basidiomata, c- basidiospores, d-basidia, e-pileipellis (bars: a and b= 15 mm, c and d= 10 μ m, e= 20 μ m).



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